CLAIMS

1. A method for driving a liquid crystal display device having a liquid crystal panel, the liquid crystal panel comprising a plurality of source lines to which pixel data are supplied, a plurality of gate lines to which scanning signals are supplied, pixel cells positioned in matrix form in correspondence with intersecting points of the source lines and the gate lines, a source driver that drives the source lines based on an input image signal, a gate driver that drives the gate lines, and a back light, the pixel cells being OCB cells,

wherein a first period for writing a signal for initializing a state of a liquid crystal in the pixel cells and a second period for writing pixel data in correspondence with the image signal in the pixel cells are provided selectively in one frame period, and a voltage level to be applied to each pixel cell in the first period is set such that each pixel cell retains a voltage Vsup higher than that in the second period.

2. The method for driving a liquid crystal display device according to claim 1, wherein a ratio occupied by the first period in one frame period is set to be less than 20%.

3. The method for driving a liquid crystal display device according to claim 1, wherein when a voltage of a predetermined level or lower is applied to the pixel cell, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame.

4. The method for driving a liquid crystal display device according to claim 1, wherein when a voltage of a predetermined level or lower is applied to the same pixel cell continuously in a predetermined number of preceding frames including a current frame, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame.

5. The method for driving a liquid crystal display device according to claim 1, wherein the voltage Vsup is set variably for each frame.

6. The method for driving a liquid crystal display device according to claim 3 or 4, wherein when it is judged that the first period needs to be set, a voltage Vsup to be applied in a next frame is set to be of a level not less than

a voltage Vsup applied in an immediately preceding frame, while when it is judged that the first period does not need to be set, a voltage Vsup to be applied in a next frame is set to be of a level not more than a voltage Vsup applied in an immediately preceding frame.

7. The method for driving a liquid crystal display device according to claim 1, wherein a length of the first period is set variably for each frame.

8. The method for driving a liquid crystal display device according to claim 3 or 4, wherein when it is judged that the first period needs to be set, a first period to be set in a next frame is set to be not less than a length of a first period set in an immediately preceding frame, while when it is judged that the first period does not need to be set, a first period to be set in a next frame is set to be not more than a length of a first period set in an immediately preceding frame.

9. The method for driving a liquid crystal display device according to claim 1, wherein the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up brighter in the frame in which the first period is set than in the frame in which the first period is not set.

10. The method for driving a liquid crystal display device according to claim 1, wherein the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up bright in correspondence with a length of the first period.

11. The method for driving a liquid crystal display device according to claim 1, wherein a length of the first period is controlled by a result of calculating an average luminance level by an image signal input in a predetermined number of preceding frames and an average luminance level by an image signal to be input in a current frame.

12. The method for driving a liquid crystal display device according to claim 11, wherein when a difference between an average luminance level by an image signal input in a predetermined number of preceding frames and an average luminance level by an image signal to be input in a current frame is

larger than a predetermined level, the first period is set in a predetermined length in a next frame.

13. The method for driving a liquid crystal display device according to claim 1, wherein it is detected whether an input image signal is a moving image or a static image, and as a result of detection, the first period is set longer than a predetermined length when it is judged that the input image signal is a moving image, and the first period is set shorter than a predetermined length when it is judged that the input image signal is a static image.

14. The method for driving a liquid crystal display device according to claim 1, wherein when the image signal as a digital signal is converted to an analog signal inside the source driver, a reference voltage used for conversion is switched in synchronization with a driving timing of the source line and the gate line.

15. The method for driving a liquid crystal display device according to claim 1, wherein the pixel data are supplied to the source lines in not more than half a time that can be spent for scanning one scanning line in one frame.

16. The method for driving a liquid crystal display device according to claim 1, wherein a voltage corresponding to pixel data for one screen is applied to each pixel cell in not more than half a time of one frame period.

17. A liquid crystal display device having a liquid crystal panel, the liquid crystal panel comprising a plurality of source lines to which pixel data are supplied, a plurality of gate lines to which scanning signals are supplied, pixel cells positioned in matrix form in correspondence with intersecting points of the source lines and the gate lines, a source driver that drives the source lines based on an input image signal, a gate driver that drives the gate lines, and a back light, the pixel cells being OCB cells,

wherein a first period for writing a signal for initializing the state of a liquid crystal in the pixel cells and a second period for writing pixel data in correspondence with the image signal in the pixel cells are set selectively in one frame period, and means for setting a voltage level to be applied to each

pixel cell in the first period such that each pixel cell retains a voltage Vsup higher than that in the second period is provided.

18. The liquid crystal display device according to claim 17, wherein the setting means sets the voltage Vsup variably for each frame.

19. The liquid crystal display device according to claim 17, wherein the setting means sets a length of the first period variably for each frame.

20. The liquid crystal display device according to claim 17, further comprising back light luminance control means for controlling brightness of the back light, wherein the back light luminance control means controls the back light such that the back light lights up bright in correspondence with a length of the first period.